NEW CLAIM LANGUAGE WITH INCORPORATED AMENDMENTS

(1). A liquid crystal display comprising:

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first and second substrates each having a display and a non-display region and being disposed to face each other;

spacers disposed in the non-display region of at least one of the first and the second substrates and being formed of photosensitive resin which regulates a cell gap between the first and the second substrates; and

liquid crystal sandwiched between the first and the second substrates,

wherein said spacers have a dynamic hardness value from 26 to 30, which is obtained by the following formula:

$DH=KxPmax/hmax^2$,

wherein DH is dynamic hardness, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hmax is the total maximum variation obtained by adding the measured elastic deformation and plastic deformation under load.

(2). A liquid crystal display comprising:

first and second substrates each having a display and a non-display region and being disposed to face each other;

spacers disposed in the non-display region of at least one of the first and the second substrates and being formed of photosensitive resin which regulates a cell gap between the first and the second substrates; and

liquid crystal sandwiched between the first and the second substrates,

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wherein said spacers have a hardness value of plastic deformation (HV) from 38 to 46, which is obtained by the following formula:

$HV=K x Pmax/hr^2$,

wherein HV is hardness of plastic deformation, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hr is measured variation when the tangent in the maximum variation point of a curb has no load in the case of unloading.

(3). A liquid crystal display comprising:

first and second substrates each having a display and a non-display region and being disposed to face each other;

spacers disposed in the non-display region of at least one of the first and the second substrates and being formed of photosensitive resin which regulates a cell gap between the first and the second substrates; and

liquid crystal sandwiched between the first and the second substrates,

wherein said spacers have dynamic hardness value (DH) from 26 to 30, which is obtained by the following formula:

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$DH=KxPmax/hmax^2$,

wherein DH is dynamic hardness, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hmax is the total maximum variation obtained by adding the measured elastic deformation and plastic deformation under load,

and wherein said spacers have a hardness value of plastic deformation (HV) from 38 to 46, which is obtained by the following formula:

$HV=KxPmax/hr^2$,

wherein HV is hardness of plastic deformation, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hr is measured variation when the tangent in the maximum variation point of a curb has no load in the case of unloading.

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(13) The liquid crystals according to claim 1 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the

diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

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(14) The liquid crystals according to claim 2 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(15) The liquid crystals according to claim 3 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(16) The liquid crystals according to claim 4 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(17) The liquid crystals according to claim 5 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(18) The liquid crystals according to claim 6 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(19) The liquid crystals according to claim 7 wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface.

(20) The liquid crystals according to claim 12 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the

diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

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(21) The liquid crystals according to claim 13 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(22) The liquid crystals according to claim 14 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(23) The liquid crystals according to claim 15 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower

bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(24) The liquid crystals according to claim 16 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(25) The liquid crystals according to claim 17 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(26) The liquid crystals according to claim 18 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower

bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(27) The liquid crystals according to claim 19 wherein said spacers have the length of one side of the upper bottom equal to the length of one side of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers, or the diameter of the upper bottom equal to the diameter of the lower bottom decreased by from 0.5H to 0.9H, where H is the maximum height of said spacers.

(29). The method according to claim 28 wherein said selecting of a photosensitive resin comprises choosing a photosensitive resin based on at least one of the group consisting of:

(a) a dynamic hardness value from 26 to 30, which is obtained by the following formula:

$DH=KxPmax/hmax^2$,

wherein DH is dynamic hardness, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hmax is the total maximum variation obtained by adding the measured elastic deformation and plastic deformation under load;

(b) a hardness value of plastic deformation (HV) from 38 to 46, which is obtained by the following formula:

$HV=KxPmax/hr^2$,

wherein HV is hardness of plastic deformation, K is a constant value assigned to the indentator used to test the liquid crystal display, Pmax is maximum load, and hr is measured variation when the tangent in the maximum variation point of a curb has no load in the case of unloading;

(c) an elastic coefficient from 100 to 500 kg/mm^2; a linear expansion coefficient which is nearly equal to the coefficient of volume expansion per unit area of the liquid crystal;

(d) wherein for rectangular spacers, the length of one side of the upper spacer surface is 50 to 90% smaller than the length of one side of the lower spacer surface and wherein for circular spacers, the diameter of the upper spacer surface is 50 to 90% smaller than the diameter of the lower spacer surface; and

(e) a column occupancy ratio from 0.05 to 0.86%, which is expressed as follows:

Column occupancy ratio=(Lower bottom area of column×column density/pixel area)×100

Column density: Total number of columns/total number of pixels.